PHILADELPHIA REGIONAL HOUSE PRICE INDICES

May 9, 2018

KEVIN C. GILLEN, Ph.D.
Kevin.C.Gillen@Drexel.edu

Disclaimers and Acknowledgments: The Lindy Institute for Urban Innovation at Drexel University and Houwzer Inc. provide this report free of charge to the public. The report is produced by Kevin Gillen, a Senior Research Fellow with the Lindy Institute and a Senior Economic Advisor with Houwzer. The author thanks Houwzer Inc., Azavea.com, the Philadelphia Office of Property Assessment, the Federal Housing Finance Agency, Case-Shiller MacroMarkets LLC, RealtyTrac, Zillow.com, Trulia.com and the NAHB for making their data available for this report. © 2017, Drexel University, All Rights Reserved.
Philadelphia Regional House Price Indices 1980-2018
1980Q1=100

*Empirically estimated by Kevin C. Gillen, PhD

**Courtesy Federal Housing Finance Agency (FHFA)
House Price Appreciation 1987-2018:
Philadelphia Region v. 10-City U.S. Composite

% Change 10-City Philadelphia
1998 to Peak: +172% +106%
From Peak: -1.6% -7.8%

*Source: Case-Shiller MacroMarkets LLC. The 10-City Composite Index includes Boston, Chicago, Denver, Las Vegas, Los Angeles, Miami, New York, San Diego, San Francisco and Washington DC. It does not include Philadelphia.
Philadelphia Regional House Price Indices 1980-2018
by Philadelphia Region and State: 1980Q1=100

*Empirically estimated by Kevin C. Gillen, Ph.D.*

**Courtesy Federal Housing Finance Agency (FHFA)**
Philadelphia Regional House Price Indices 1980-2018
City v. Suburb v. U.S. Average.: 1980Q1=100

*Empirically estimated by Kevin C. Gillen, PhD

**Courtesy Federal Housing Finance Agency (FHFA)**

Note: The suburban index includes all counties in the regional index, except for Philadelphia county.
YoY Change in Average House Prices: 1980-2018
Philadelphia County v. Philadelphia Suburbs v. 10-City Composite

*Empirically estimated by Kevin C. Gillen, Ph.D.

**Empirically estimated by Case-Shiller. The 10-City Composite reflects average annual house price changes in ten large US cities, including: Boston Chicago, Denver, Las Vegas, Los Angeles, Miami, New York, San Diego, San Francisco and Washington DC. It does not include Philadelphia.
### Total House Price Appreciation Rates by Philadelphia Area Submarket and U.S.

<table>
<thead>
<tr>
<th>Period</th>
<th>Philadelphia County*</th>
<th>Philadelphia Suburbs*</th>
<th>U.S.A.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>39-Year</td>
<td>171.7%</td>
<td>139.6%</td>
<td>144.3%</td>
</tr>
<tr>
<td>10-Year</td>
<td>21.6%</td>
<td>-13.2%</td>
<td>15.1%</td>
</tr>
<tr>
<td>1-Year</td>
<td>4.3%</td>
<td>2.7%</td>
<td>6.5%</td>
</tr>
<tr>
<td>1-Quarter</td>
<td>-1.6%</td>
<td>-1.5%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

*Empirically estimated by Kevin C. Gillen Ph.D.

**Source: U.S. Federal Housing Finance Agency (FHFA). These numbers are through 2017Q4 only. “MSA”=“Metropolitan Statistical Area”, which is the entire 10-county region.
Philadelphia Region House Price Appreciation Rates by County

<table>
<thead>
<tr>
<th>Period</th>
<th>Philadelphia</th>
<th>Bucks</th>
<th>Chester</th>
<th>Delaware</th>
<th>Montgomery</th>
<th>New Castle</th>
<th>Mercer</th>
<th>Burlington</th>
<th>Camden</th>
<th>Gloucester</th>
<th>Salem</th>
</tr>
</thead>
<tbody>
<tr>
<td>38-Year</td>
<td>172%</td>
<td>164%</td>
<td>160%</td>
<td>139%</td>
<td>150%</td>
<td>136%</td>
<td>162%</td>
<td>117%</td>
<td>112%</td>
<td>130%</td>
<td>103%</td>
</tr>
<tr>
<td>10-Year</td>
<td>21.6%</td>
<td>-0.5%</td>
<td>2.8%</td>
<td>-7.1%</td>
<td>-4.8%</td>
<td>-11.8%</td>
<td>-7.8%</td>
<td>-27.2%</td>
<td>-31.8%</td>
<td>-22.0%</td>
<td>-51.9%</td>
</tr>
<tr>
<td>1-Year</td>
<td>4.3%</td>
<td>4.1%</td>
<td>3.3%</td>
<td>5.8%</td>
<td>2.8%</td>
<td>2.8%</td>
<td>5.3%</td>
<td>-2.0%</td>
<td>-2.3%</td>
<td>-2.1%</td>
<td>-6.4%</td>
</tr>
<tr>
<td>1-Quarter</td>
<td>-1.6%</td>
<td>0.3%</td>
<td>-0.4%</td>
<td>1.2%</td>
<td>0.0%</td>
<td>3.0%</td>
<td>1.7%</td>
<td>-3.8%</td>
<td>-1.8%</td>
<td>-3.3%</td>
<td>9.5%</td>
</tr>
</tbody>
</table>

All county-level indices and appreciation rates estimated by Kevin C. Gillen, Ph.D.
2018 Q1 House Price Rate of Change by County

Montgomery: +0.0%
Chester: -0.4%
Delaware: +1.2%
New Castle: +3.0%
Bucks: +0.3%
Philadelphia: -1.6%
Mercer: +1.7%
Burlington: -3.8%
Camden: -1.8%
Gloucester: -3.3%
Salem: +9.5%

Note: Each county is extruded by its average change in house values during 2018 Q1 in order to reflect its growth (or depreciation) rate relative to other counties.
Median Regional House Price v. Indexed Regional House Price:
1980-2018

*Empirically estimated by Kevin C. Gillen, Ph.D.
Median House Price by County, Smoothed*: 1980-2018

*The price data was smoothed by applying a 3-period moving average, in order to eliminate seasonal noise.
Number of Regional House Sales per Quarter: 2005-2018

Q1
Q2
Q3
Q4
Qtly. Average
Number of Regional House Sales 2005-2018 with Price ≥ $1m

Q1
Q2
Q3
Q4
Qtly. Average

© 2018 Kevin.C.Gillen@Drexel.edu
Philadelphia Region House Sales in 2018 Q1

$Price/SqFt
- $>175
- $140-175
- $110-140
- $70-110
- $<70

Note: the categories for $price/sqft are based upon the quintiles of its distribution. Hence, exactly 20% of all sales fall into each one of the five categories.
Bucks County House Sales in 2018 Q1

Note: the categories for $price/sqFt are based upon the quintiles of its distribution. Hence, exactly 20% of all sales fall into each one of the five categories.
Montgomery County House Sales in 2018 Q1

Note: the categories for $price/sqft are based upon the quintiles of its distribution. Hence, exactly 20% of all sales fall into each one of the five categories.
Chester County House Sales in 2018 Q1

Note: the categories for $price/sqft are based upon the quintiles of its distribution. Hence, exactly 20% of all sales fall into each one of the five categories.
Note: the categories for $price/sqft are based upon the quintiles of its distribution. Hence, exactly 20% of all sales fall into each one of the five categories.
New Castle County House Sales in 2018 Q1

Note: the categories for $Price/SqFt are based upon the quintiles of its distribution. Hence, exactly 20% of all sales fall into each one of the five categories.
Mercer County House Sales in 2018 Q1

Note: the categories for $price/sqft are based upon the quintiles of its distribution. Hence, exactly 20% of all sales fall into each one of the five categories.
Burlington County House Sales in 2018 Q1

Note: the categories for $price/sqFt are based upon the quintiles of its distribution. Hence, exactly 20% of all sales fall into each one of the five categories.
Camden County House Sales in 2018 Q1

Note: the categories for $price/sqft are based upon the quintiles of its distribution. Hence, exactly 20% of all sales fall into each one of the five categories.
Gloucester County House Sales in 2018 Q1

Note: the categories for $price/sqft are based upon the quintiles of its distribution. Hence, exactly 20% of all sales fall into each one of the five categories.
Salem County House Sales in 2018 Q1

$Price/SqFt

- >$175
- $140-175
- $110-140
- $70-110
- <$70

Note: the categories for $price/sqft are based upon the quintiles of its distribution. Hence, exactly 20% of all sales fall into each one of the five categories.
+$1 Million Dollar House Sales in 2018 Q1
Philadelphia Houses Listed For Sale: Inventory v. Sales Rate

% Absorbed = (#Sales/#Listings)
Philadelphia Suburb's Houses Listed For Sale: Inventory v. Sales Rate

# Houses Listed For Sale
% Absorbed
# Homes Listed "For Sale"
% Sold = (#Sales/#Listings)

Source: TrendMLS

© 2018 Kevin.C.Gillen@Drexel.edu
Average Days-on-Market* for Home Sales

*DOM is the average "days-on-market": the average number of days it takes for a listed home to sell. In a market that is evenly balanced between buyers and sellers, 50-70 days is considered the typical norm (source: Redfin). This number is not available separately for Philadelphia's suburbs, but the regional DOM can be considered more representative of the suburbs.
Months Supply of Inventory measures how many months it would take to completely burn off the existing inventory of homes currently listed for sale, given their current pace of sales. 5-7 months is considered a normal, balanced market. More than 7 months indicates a Buyer's market, and less than 5 months indicates a Seller's market.
Months Supply of Inventory in Philadelphia Suburbs

Months Supply of Inventory measures how many months it would take to completely burn off the existing inventory of homes currently listed for sale, given their current pace of sales. 5-7 months is considered a normal, balanced market. More than 7 months indicates a Buyer’s market, and less than 5 months indicates a Seller’s market.
1 out of every 949 homes in Philadelphia is currently in the process of foreclosure, which is up from 1 out of every 1,084 homes in the previous quarter.

In the entire Commonwealth, 1 out of every 1,731 homes in Pennsylvania is in the process of foreclosure, which is also up from 1 out of every 1,767 homes in the previous quarter.

Source: http://www.realtytrac.com/statsandtrends/foreclosuretrends/pa
© 2018 Kevin.C.Gillen@Drexel.edu
South Jersey’s foreclosure rate continues to remain the highest in the region, but showed significant improvement this quarter.

Four of the five counties in New Jersey with the highest foreclosure rates are in South Jersey. They collectively have a foreclosure rate averaging one in every 337 homes. This is well above the statewide average of 1 in every 605 homes.

And, the foreclosure rate for South Jersey further deteriorated this quarter, from its previous level of 1 in every 450 homes in the previous quarter.
Kent county in central Delaware leads the state with the highest foreclosure rate, with one in every 640 homes.

Next is New Castle county, with one in every 783 homes, followed by Sussex county with one in every 1,161 homes being in the process of foreclosure.

All three counties showed increases in their foreclosure rates from the previous quarter.

Source: http://www.realtytrac.com/statsandtrends/foreclosuretrends/de
© 2018 Kevin.C.Gillen@Drexel.edu
Housing's Road to Recovery: %Lost v. %Recovered by Metro Area

The length of each bar below the horizontal axis represents the total % decline in house prices in each major U.S. metro area from peak to trough. The total rebound (to date) in house prices is represented by the blue component of each bar, with the remainder represented by the red component. A red bar that is above the horizontal axis indicates a metro area which has fully erased its losses and whose house price levels are now above their peak during the bubble. For example, Philadelphia County's house prices fell by an average of 22% from peak to trough. To date, they have rebounded by 41% and are now 19% higher than their previous peak. By contrast, Philadelphia's suburbs fell by a similar amount, yet have only recovered 8% and thus need to rise another 17% to completely erase their losses.

*Empirically estimated by Kevin C. Gillen, Ph.D. All other metros courtesy of S&P Case-Shiller.

© 2018 Kevin.C.Gillen@Drexel.edu